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CC: "Michael PINTO" <michael.pinto@total.com>
Date: 4/1/2021 12:27:50 PM
Subject: Arkema GW Monitoring - Groundwater Filters and Detection Limits

Hi Madi,

We have developed the following plan to gather more potentially useful data from turbid sampling locations and to address MDL and LOQ requirements.

We researched the use of groundwater filters for samples with hydrophobic organics. Groundwater filters are very rarely used to filter samples for hydrophobic organics. The best option is a glass fiber filter since it is unlikely to cause any significant adsorption. Unfortunately the only glass fiber filters that we have found for use in the field are relatively coarse pre-filters. However, Test America can filter the samples using a 0.45 micron glass fiber filter.

The following will be done for turbid samples:

- ☐ Send the samples for organic COCs (pesticides, herbicides, dioxins/furans, PCBs, SVOCs/PAHs) to the lab without field filtration. The lab will filter one set of bottles. The filtered and unfiltered samples will be analyzed for organic COCs.
- ☐ The metal samples that are slated for dissolved analyses can be field filtered as we have been doing with a polysulfone in-line filter since metals are not hydrophobic.

The turbidity issue is likely to come up again when we sample the riverbank piezometers and collect porewater samples. We are conducting a small pilot study to quantify the effects of glass filter filtration versus simply allowing the sediment to settle out of the sample bottles. This is being done on a subset of groundwater samples that are only analyzed for DDX since the other hydrophobic organics will have similar adsorption properties. The data from this comparative analysis will be used to determine whether sample filtration is effective and/or whether natural settling of solids in the water samples could be equally effective at producing non-turbid samples with equivalent results.

Finally, we have assessed the feasibility of lowering MDLs and LOQs to the Project Action Limits (PALs) for groundwater. Here are our recommendations:

- ☐ DDX – No changes recommended. Test America West Sacramento can run Method 1699 and get the MDLs below the PALs, but the LOQs are still above the PALs. In addition, this lab is not certified in Oregon for this particular test method.
- ☐ Metals (As and Cd) – No changes recommended. Battelle could get the LOQs below the PALs, but would require special methods. These are not metals present at the site, so the change in analytical method is not recommended.
- ☐ PAHs and 2,3,7,8-TCDD – No changes recommended. Axys could get LOQs below PALs, but it would require high volume sampling (e.g., 100 liters). This is not practical for groundwater sampling.
- ☐ TPH-D – No changes recommended. No methods were identified that could reach the PAL (0.0026 mg/L).
- ☐ Cyanide – Change to Method 4500 CN E LL at Test America CalScience. The MDL and LOQ are both below the PAL using this method.

Please let me know if you have any questions or if you would like me to set up a short Teams meeting to discuss. Thanks!

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